

Application No.: 09/559,255

Docket No.: R2184.0075/P075

REMARKS

Claims 1, 9, 17 and 18 are amended. Claims 1-18 remain in the application. Applicant reserves the right to pursue the original claims and other claims in this and other applications.

Claims 1-18 are rejected under 35 U.S.C. § 102 as being anticipated by Cullen. Reconsideration is respectfully requested.

The invention of claim 1 relates to a method of displaying images that resemble each other. The method includes the steps of dividing a feature space into sub-spaces having a hierarchical structure, dividing a display space into divided spaces corresponding to respective sub-spaces, and displaying the images in the divided spaces. According to claim 1, as amended, "any given one of the images displayed in one of the divided spaces . . . belongs to one of the sub-spaces that corresponds to said one of the divided spaces."

Cullen refers to a system in which icons 500 (Fig. 5) represent respective cluster nodes. The user descends further into a hierarchy by selecting one of the icons as a key for further search. Only when the user reaches a leaf cluster, i.e., a group of actual images as opposed to cluster nodes, are the images displayed (as "Retrieved Images," see column 6, lines 23-32). Please note that in the Cullen system the images shown as "Retrieved Images" belong to the leaf cluster that the user has reached. Only the images belonging to a single cluster are displayed. Images from which image features are extracted, as opposed to icon images, are not displayed in a plurality of divided spaces of the display space. Rather, such images are displayed only in a single display space. Thus, Cullen fails to disclose or suggest the method of amended claim 1, including the step of: "displaying the images in the plurality of divided spaces of the display space, such that any given one of the

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images displayed in one of the divided spaces . . . belongs to one of the sub-spaces that corresponds to said one of the divided spaces."

Claims 9, 17 and 18, as amended, should be allowable at least for reasons similar to those discussed above in connection with claim 1, although the claims are different from each other in scope. Note that claim 18, for example, refers to displaying "items" in the recited plurality of divided spaces.

Claims 2-8 and 10-16 should be allowable along with claims 1 and 9, respectively, and there are other reasons as to why the dependent claims should be allowable. Claim 3, for example, relates to a clustering method. Cullen fails to disclose or suggest the clustering method of claim 3. Cullen, column 5, lines 22-32, relates to a search via a user interface, and has nothing to do with the claimed clustering method. The description at column 7, lines 51-67, of Cullen, relates to a method of feature extraction, not a method of making clusters.

Dependent claims 4 and 5 relate to a method of mapping the recited tree structure to the display space for the arrangement of the images. Cullen, column 7, lines 51-65, and column 8, lines 6-11, is directed to a method of feature extraction, not a method of mapping a tree structure.

Dependent claims 6-8 relate to a method of automated mapping of the tree structure to the display space. Fig. 3 of Cullen shows a manually arranged display space, not something that is arranged according to the size of images. Fig. 5 of Cullen illustrates changing the size of icons. The description at column 6, lines 50-67, of Cullen is directed to a method of displaying a plurality of pages, and is generally unrelated to the claimed invention.

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Allowance of the application with claims 1-18, as amended, is solicited.

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Respectfully submitted,

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MARK-UP VERSION SHOWING CHANGES MADE

1. (Amended) A method of displaying images that resemble each other, comprising the steps of:

extracting image features from images;

dividing a feature space of the image features into sub-spaces having a hierarchical structure;

generating a tree structure having the sub-spaces as nodes thereof;

dividing a display space into a plurality of divided spaces [reflecting] corresponding to the respective sub-spaces by taking into account the tree structure; and  
[assigning] displaying the images [to] in the [corresponding] plurality of divided spaces [so as to display the images arranged in] of the display space, such that any given one of the images displayed in one of the divided spaces of the display space belongs to one of the sub-spaces that corresponds to said one of the divided spaces of the display space.

9. (Amended) A computer-readable medium having a program embodied therein for causing a computer to create a display screen image for displaying images that resemble each other, said program comprising:

a program code for extracting image features from images;

a program code for dividing a feature space of the image features into sub-spaces having a hierarchical structure;

a program code for generating a tree structure having the sub-spaces as nodes thereof;

a program code for dividing a display space into a plurality of divided spaces [reflecting] corresponding to the respective sub-spaces by taking into account the tree structure; and

a program code for [assigning] displaying the images [to] in the [corresponding] plurality of divided spaces [so as to display the images arranged in] of the display space,

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such that any given one of the images displayed in one of the divided spaces of the display space belongs to one of the sub-spaces that corresponds to said one of the divided spaces of the display space.

17. (Amended) A device for displaying images that resemble each other, comprising:

a memory which stores therein a program; and

a CPU which executes the program, wherein said CPU executing the program performs the steps of:

extracting image features from images;

dividing a feature space of the image features into sub-spaces having a hierarchical structure;

generating a tree structure having the sub-spaces as nodes thereof;

dividing a display space into a plurality of divided spaces [reflecting] corresponding to the respective sub-spaces by taking into account the tree structure; and  
[assigning] displaying the images [to] in the [corresponding] plurality of divided spaces [so as to display the images arranged in] of the display space, such that any given one of the images displayed in one of the divided spaces of the display space belongs to one of the sub-spaces that corresponds to said one of the divided spaces of the display space.

18. (Amended) A computer-readable medium having a program embodied therein for causing a computer to create a display screen image for displaying items that resemble each other, said program comprising:

a program code for extracting item features from items;

a program code for dividing a feature space of the item features into sub-spaces having a hierarchical structure;

a program code for generating a tree structure having the sub-spaces as nodes thereof;

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a program code for dividing a display space into a plurality of divided spaces [reflecting] corresponding to the respective sub-spaces by taking into account the tree structure; and

a program code for [assigning] displaying the items [to] in the [corresponding] plurality of divided spaces [so as to display the items arranged in] of the display space, such that any given one of the items displayed in one of the divided spaces of the display space belongs to one of the sub-spaces that corresponds to said one of the divided spaces of the display space.